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Announcement

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Award-winning paper in 2022

Papers published in *Engineering History and Heritage* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 13 October 2023, ICE President Keith Howells presented awards to the following paper published in *Engineering History and Heritage* in 2022. The editorial panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the awards.

Telford Premium Prize

The Telford Premium Prize, presented for the best paper published in *Engineering History and Heritage*, was awarded to Grant *et al.* (2022).

Abstract

Seismic risk mitigation in existing buildings requires an engineering assessment of the current condition and expected seismic performance and an identification of possible deficiencies that should be addressed. For heritage and historical buildings in particular, there is significant benefit in using the most detailed analysis methods available to avoid the conservatism

inherent in simpler methods and thereby minimise unnecessary interventions and more precisely pinpoint where strengthening is required. On recent heritage projects, Arup has used the analysis software LS-DYNA and a new material model, calibrated against experimental tests on unreinforced masonry components and buildings to carry out (or supplement) seismic assessments. The analysis method (non-linear response history analysis) is not new, but its application on detailed finite-element models of complex historic structures has previously been computationally prohibitive and requires significant analyst experience to deliver reliable results. This paper summarises three of these recent Arup projects: Woltersum Church (the Netherlands), Procuratie Vecchie (Venice) and a building cluster in the historical centre of Appingedam (the Netherlands). The case studies show that these analyses allow complex features of seismic performance to be considered, such as damage or modifications to the building over time, pounding (separate buildings colliding into one another due to seismic movements) and load sharing between adjacent structures.

REFERENCE

Grant DN, Dozio D, Fici P and Sturt R (2022) Case studies on seismic assessment of historical buildings using advanced analysis. *Proceedings of the Institution of Civil Engineers – Engineering History and Heritage* **175(3)**: 95–106, <https://doi.org/10.1680/jenhh.21.00003>.